

Listing of the Claims:

1. (Currently Amended) A cooling method of a metal part by immersing the heated metal part in a cooling liquid, comprising the step of:

breaking a vapor film which is formed when the cooling liquid vaporizes on a surface of the metal part;

wherein the step of breaking the vapor film occurs by applying a repeatedly varying pressure to a the vapor film formed when the cooling liquid vaporizes on a surface of the metal part, wherein the vapor film is broken without the stirring of the cooling liquid so that the pressure repeatedly varies by the step of one of 1) applying oscillations to the cooling liquid with an oscillation device with an oscillation device horizontally and reciprocally moving in the cooling liquid and a stirrer separately arranged in the cooling liquid, said oscillation device reciprocally moving in the cooling liquid, 2) changing pressure applied to a liquid level of the cooling liquid by introducing a gas therein via a gas introduction pipe; and 3) combining applying the oscillations to the cooling liquid with an oscillation device horizontally and reciprocally moving in the cooling liquid and changing the pressure to be applied to the liquid level of the cooling liquid by introducing the gas.

2. (Cancelled)

3. (Cancelled)

4. (Cancelled)

5. (Currently Amended) The cooling method of a the metal part according to claim 2 1, wherein the step of applying oscillations to the cooling liquid includes the step of using multiple ~~oscillators~~ oscillation devices.

6. (Currently Amended) The cooling method of a the metal part

according to claim 2 1, further includes the step of adjusting at least ~~either one~~ one of the an amplitude and frequency of the oscillations according to the thickness of the vapor film.

7. (Currently Amended) The cooling method of a the metal part according to claim 2 1, further including the step of adjusting at least ~~either one~~ one of the an amplitude and frequency of the oscillations according to the condition of the cooling liquid.

8. (Currently Amended) A cooling method of a the metal part according to claim 1, further comprising the step of stirring the cooling liquid after the vapor film begins to be broken ~~and wherein~~ so that bubbles formed by the breakage of the vapor film are caused to diffuse in the cooling liquid.

9. (Currently Amended) The cooling method of a the metal part according to claim 8, further comprising the step of adjusting at least either of the intensity of the stirring and the direction of a flow generated by the stirring according to the condition of the cooling liquid and the condition of the metal part in the cooling liquid.

10. (Currently Amended) A method of manufacturing a metal part, characterized in that the manufacturing method comprises ~~a step of the steps of:~~
heating a the metal part part; and ~~a step of~~
cooling the metal part after the heating thereof by immersing the metal part in a cooling liquid, ~~and in that in~~ wherein the cooling step, ~~by~~ includes breaking the vapor film ~~applying a repeatedly varying pressure to a vapor film~~ which is formed when the cooling liquid vaporizes on a surface of the metal part by applying a pressure to the vapor film so that the pressure repeatedly varies, the vapor film is broken without the stirring of the cooling liquid, wherein the step of applying a pressure to the vapor film so that the pressure repeatedly varies includes one of 1)

applying horizontal oscillations to the cooling liquid, 2) repeatedly changing a pressure to be applied to a liquid level of the cooling liquid, and 3) a combination of applying the horizontal oscillations to the cooling liquid and changing the pressure to be applied to the liquid level of the cooling liquid.

11. (Cancelled)

12. (New) The manufacturing method of claim 10 further comprising the step of:

actuating a stirring process of the cooling liquid when the vapor film begins to be broken.

13. (New) The manufacturing method of claim 10, wherein the step of applying horizontal oscillations to the cooling liquid includes performing horizontal reciprocal motions.

14. (New) The manufacturing method of claim 10, wherein the step of changing a pressure to be applied to a liquid level of the cooling liquid includes the step of introducing a gas directly into the cooling liquid.

15. (New) The manufacturing method of claim 14 further comprising exhausting the gas from the cooling liquid.

16. (New) A cooling method of a metal part by immersing the heated metal part in a cooling liquid, comprising:

breaking a vapor film which is formed when the cooling liquid vaporizes on a surface of the metal part;

wherein the step of breaking occurs by combining steps of applying oscillations to the cooling liquid with an oscillation device horizontally and

reciprocally moving in the cooling liquid and changing the pressure applied to the liquid level of the cooling liquid.